

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA**

VEOLIA WATER SOLUTIONS &)	
TECHNOLOGIES NORTH)	
AMERICA, INC.,)	
)	
Plaintiff and Counterclaim)	
Defendant,)	
)	
)	Civil Action Number 10-484
v.)	
)	
)	
AQUATECH INTERNATIONAL)	
CORPORATION and DEBASISH)	
MUKHOPADHYAY,)	
)	
Defendants and)	
Counterclaim Plaintiffs.)	

MEMORANDUM OPINION

CONTI, Chief District Judge

In this action, Veolia Water Solutions & Technologies North American, Inc.¹ (“Veolia”) seeks a declaratory judgment that two patents owned by Debasish Mukhopadhyay (“Mukhopadhyay”) and exclusively licensed to Aquatech International Corporation (“Aquatech International,” and together with Mukhopadhyay, “Aquatech”), are not infringed by Veolia’s OPUS process and are invalid. (ECF No. 60; ECF No. 267 ¶ 3.) The two patents identified in Veolia’s declaratory judgment complaint are United States Patent Number 5,925,255 (the “’255 Patent”), and United States Patent Number 6,537,456 (the “’456 Patent”). (ECF No. 60 ¶ 9; ECF

¹ N.A. Water Systems, LLC was the named plaintiff when suit was filed, but due to a merger that took place during the pendency of this lawsuit, Veolia Water Solutions & Technologies North American, Inc. was substituted as the proper plaintiff. (ECF Nos. 156 and 169; ECF No. 267 ¶ 1.)

No. 63 at 15-16.) Veolia's complaint also asserts state law tort claims, sounding in tortious interference with prospective contractual relations and defamation, against Aquatech. (ECF Nos. 60.) Aquatech, in response to Veolia's complaint, asserts counterclaims that accuse Veolia's OPUS process of infringing the HERO patents. (ECF No. 63; ECF No. 267 ¶ 4.)

Pending before the court are three motions for summary judgment: (1) Veolia's motion for judgment as a matter of law that it does not infringe the '255 Patent or the '456 Patent (ECF No. 241); (2) Aquatech's motion for judgment as a matter of law that Veolia is not entitled to relief on its state law tort claims (ECF No. 246); and (3) Aquatech's motion for judgment as a matter of law that the '255 Patent is not obvious (ECF No. 279). All three motions have been fully briefed and will be disposed of in this opinion.² For the reasons set forth below, all motions, with one exception, will be denied because there are evidentiary disputes about material facts that require resolution by a jury. The sole exception is that this court grants Veolia's motion for summary judgment of noninfringement with respect to the OPUS water treatment system installed at a project for Kennecott Eagle Minerals Company because there is no factual or legal dispute that infringement of claim 98 of the '255 Patent must be determined by measuring the percentage of total organic carbon ("TOC") removed at the point after the solution passes through the first reverse osmosis system. See infra Sec. III.B.2(a).

² The court is compelled to comment, at the outset, about the state of the docket in this matter. Despite prior notification during Daubert proceedings (see e.g., 7/9/14 Text Order), and clear direction from this court (ECF No. 235; Chambers Rules), counsel repeatedly failed to properly file their submissions, especially items that they wish to file under seal, and to provide courtesy copies to the court that are tabbed and bear the CM/ECF header. Copies of some exhibits did not appear on the docket, at all, until the court explicitly directed that they be filed. The court spent a significant amount of time attempting to piece together the briefs and evidentiary record to be considered in deciding each of the motions for summary judgment. A separate order will be entered requiring counsel to comply with this court's local and chambers rules going forward.

I. Factual Background

The two patents identified in the parties' initial pleadings are the '255 Patent and the '456 Patent. (ECF No. 60 ¶ 9; ECF No. 63 at 15-16.) These patents are referred to as the HERO patents and relate to reverse osmosis ("RO") technology, which purifies water by pumping feedwater, under pressure, through a semi-permeable membrane. (ECF No. 127 at 2.) The membrane allows water to pass through, but is able to prevent passage of, or reject, most solutes dissolved in the water. (*Id.*) This process concentrates the feedwater into a reject stream of solute-containing water that does not pass through the membrane, and produces a product, or permeate, stream of relatively pure water that passes through the membrane. (*Id.*) Aquatech calls its brand of RO water treatment the HERO process. Veolia's competing brand of RO water treatment is called the OPUS process. (ECF Nos. 60 and 63 ¶ 11.) The OPUS process implements an improvement upon United States Patent Number 5,250,185, issued to Fansheng Tao (the "Tao Patent"), which is exclusively licensed to Veolia. (ECF Nos. 60 and 63 ¶¶ 21-22.) HERO and OPUS are trademarks federally registered to Mukhopadhyay and Veolia, respectively, for goods and services related to wastewater treatment systems. U.S. Trademark No. 78,204,498 (HERO), U.S. Trademark No. 75,977,148 (HERO), and U.S. Trademark No. 77,248,615 (OPUS).

In 2009, Veolia and Aquatech submitted competing bids to install a water treatment system at a plant owned by Idaho Power Company ("Idaho Power"). Kiewit Power Engineers ("Kiewit") was the general contractor on the project. (ECF Nos. 60 and 63 ¶¶ 34-37; ECF No. 302 ¶ 5.) On December 11, 2009, Aquatech International sent a letter to Kiewit, stating Mukhopadhyay's and its belief that the OPUS system being proposed to Idaho Power by Veolia infringed the HERO patents (the "Kiewit Letter"). (ECF No. 60-6 at 2-3; ECF Nos. 60 and 63 ¶

38; ECF No. 302 ¶¶ 5, 8, 20.) Veolia contends that the Kiewit Letter included false statements and misrepresentations about the HERO patents, the OPUS process, and the validity of the Tao Patent. (ECF No. 60 ¶¶ 34-71, 84-110.) Aquatech was awarded the Idaho Power contract after the Kiewit Letter was sent. (ECF Nos. 60 and 63 ¶ 59; ECF No. 302 ¶ 26.)

II. Legal Authority

Summary judgment may only be granted where the moving party shows that there is no genuine dispute as to any material fact, and that judgment as a matter of law is warranted. FED. R. CIV. P. 56(a). Pursuant to Federal Rule of Civil Procedure 56, the court must enter summary judgment against a party who fails to make a showing sufficient to establish an element essential to his or her case, and on which he or she will bear the burden of proof at trial. Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). In evaluating the evidence, the court must interpret the facts in the light most favorable to the nonmoving party, drawing all reasonable inferences in his or her favor. Watson v. Abington Twp., 478 F.3d 144, 147 (3d Cir. 2007). The burden is initially on the moving party to demonstrate that the evidence contained in the record does not create a genuine issue of material fact. Conoshenti v. Pub. Serv. Elec. & Gas Co., 364 F.3d 135, 140 (3d Cir. 2004). A dispute is “genuine” if the evidence is such that a reasonable trier of fact could render a finding in favor of the nonmoving party. McGreevy v. Stroup, 413 F.3d 359, 363 (3d Cir. 2005).

Where the nonmoving party will bear the burden of proof at trial, the moving party may meet its burden by showing that the admissible evidence contained in the record would be insufficient to carry the nonmoving party’s burden of proof. Celotex Corp., 477 U.S. at 322. Once the moving party satisfies its burden, the burden shifts to the nonmoving party, who must go beyond his or her pleadings and designate specific facts by the use of affidavits,

depositions, admissions or answers to interrogatories showing that there is a genuine issue of material fact for trial. *Id.* at 324. The nonmoving party cannot defeat a well-supported motion for summary judgment by simply reasserting unsupported factual allegations contained in his or her pleadings. *Williams v. Borough of West Chester*, 891 F.2d 458, 460 (3d Cir. 1989).

III. The Motions for Summary Judgment

A. Aquatech's Motion - State Law Tort Claims

Aquatech asks this court to enter judgment as a matter of law in its favor on the tort claims asserted by Veolia in this case. (ECF No. 246.) In its amended complaint, Veolia asserts two state law tort claims against Aquatech based upon statements made in the Kiewit Letter: (1) tortious interference with prospective contract (Count III); and (2) defamation (Count IV). (ECF No. 60 ¶¶ 84-110.) Aquatech seeks entry of judgment as a matter of law on both claims on the grounds that a) federal patent law preempts state law tort claims where a patent holder communicates, in good faith, to the marketplace about potential infringement and b) Veolia cannot establish damages. (ECF No. 248 at 2.) According to Aquatech, “Veolia concedes it has no evidence of ‘bad faith’ by the Aquatech Parties and can prove no damages which are proximately caused by the Aquatech Parties’ communications regarding [Veolia’s] alleged infringement of the ’255 HERO patent-in-suit.” (*Id.* at 3.) Not surprisingly, Veolia disputes Aquatech’s contentions, and argues that there is ample evidence in the record of both bad faith and damages to warrant submitting both state law tort claims to a jury. (ECF No. 253 at 7-14 (261, sealed version).) For the reasons set forth below, Aquatech’s motion for summary judgment on Counts III and IV of Veolia’s amended complaint will be denied.

1. The Kiewit Letter

The Kiewit Letter is addressed to Mr. Donald W. Lewis, Project Procurement Manager for Kiewit, and is signed by Devesh Mittal (“Mittal”), Vice President Industrial Solutions for Aquatech. (Id. at 2-3.) The two-page letter is dated December 11, 2009, and includes three attachments. (ECF No. 60-6 at 2.) The attachments are the ’255 Patent, a brochure from Veolia’s website about the OPUS process, and a declaration from the prosecution history of a Veolia patent. (ECF No. 60-6 and -7.)

Mittal began the Kiewit Letter by proposing that the HERO process be selected for the Idaho Power project, and explaining that the HERO process “is in line with the claims made in [the ’255 Patent].” (ECF No. 60-6 at 2.) Mittal closed the letter by touting the successful track record of the HERO process worldwide and positive business relationship between Aquatech International and Kiewit, and offering to “provide technical information and support to Kiewit to explain the claims made in the HERO patent.” (Id. at 3.)

Between Mittal’s statements about the HERO patent and process, he made various assertions about Veolia’s competing OPUS process. Mittal stated that “[t]he HERO patent holder believes that the OPUS process, based upon the depiction in the attached OPUS brochure, violates the HERO patent... and he reserves all rights to seek redress... should an actual infringement of his rights occur.” (Id. at 2.) Mittal attached the “Declaration of Larry L. Coats” and explained that it indicated that an inventor of the OPUS process, “believes that OPUS is not patentable over ‘prior arts’” and “highlight[ed] the potential ownership conflict associated with the OPUS process.” (Id. at 2-3.) Following these statements, Mittal wrote that “[w]e would suggest that Kiewit engage their legal resources to seek legal counsel on this matter.” (Id. at 3.)

2. Preemption of State Law Tort Claims

The law of the Court of Appeals for the Federal Circuit applies in determining whether patent law preempts a state law tort claim. Midwest Indus., Inc. v. Karavan Trailers, Inc., 175 F.3d 1356, 1359 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has held that federal patent law preempts state law tort liability for a patentholder's good faith conduct in communicating to the marketplace claims of infringement of its patent and warning about potential litigation. Globetrotter Software, Inc. v. Elan Computer Grp., Inc., 362 F.3d 1367, 1374 (Fed. Cir. 2004) (citing Zenith Elecs. Corp. v. Exzec, Inc., 182 F.3d 1340, 1355 (Fed. Cir. 1999)). In other words, a patent owner is entitled to notify infringers, distributors, customers, and potential customers about its patent rights and potentially infringing activity without being subject to tort liability, unless the communications are made in bad faith. GP Indus., Inc. v. Eran Indus., Inc., 500 F.3d 1369, 1374 (Fed. Cir. 2007) (citing Hunter Douglas, Inc. v. Harmonic Design, Inc., 153 F.3d 1318, 1336 (Fed. Cir. 1998)). “Indeed, a patentee, acting in good faith on its belief as to the nature and scope of its rights, is fully permitted to press those rights ‘even though he may misconceive what those rights are.’” Mikohn Gaming Corp. v. Acres Gaming, Inc., 165 F.3d 891, 897 (Fed. Cir. 1998) (quoting Kaplan v. Helenhart Novelty Corp., 182 F.2d 311, 314 (2d Cir. 1950)).

The preemption determination includes an objective prong, and a subjective prong. Zenith Elecs., 182 F.3d at 1354-55. In order to avoid preemption, and advance state law tort claims, Veolia must show that: (1) Aquatech’s “underlying infringement claim is objectively baseless,” and (2) “it was asserted in bad faith.” Globetrotter, 362 F.3d at 1375–77. To satisfy the “objectively baseless” element, Veolia must prove by clear and convincing evidence that “no reasonable litigant could realistically expect success on the merits.” Id. at 1376–77. The second

prong requires Veolia to produce evidence that Aquatech demonstrated subjective bad faith in enforcing its patent. 800 Adept, Inc. v. Murex Sec., Ltd., 539 F.3d 1354, 1370 (Fed. Cir. 2008). Bad faith is determined on a case-by-case basis. Zenith Elecs., 182 F.3d at 1354-55. A competitive commercial purpose is not of itself improper. Mikohn Gaming, 165 F.3d at 897. “In general, a threshold showing of incorrectness or falsity, or disregard for either, is required in order to find bad faith in the communication of information about the existence or pendency of patent rights.” Id.

a. Tortious Interference with Prospective Contract

Veolia identified ample record evidence to overcome federal preemption of its tortious interference claim. For instance, in opposition to Aquatech’s motion, Veolia cites to deposition testimony of Mittal, the signatory of the Kiewit Letter, Patrick Randall, Aquatech’s corporate designee, and Mukhopadhyay, to indicate that Aquatech International conducted no investigation, analysis, or review prior to sending the Kiewit Letter (ECF No. 253 at 4-5, 11-12), and to emails dated May 9, 2010 and December 30, 2011, between Mukhopadhyay and Aquatech International’s patent attorney admitting that the OPUS process proposed by Veolia to Idaho Power could not possibly infringe the ’255 Patent (ECF No. 253 at 12-13; ECF No. 269 ¶¶ 29-40; ECF No. 302 ¶¶ 29-40). A reasonable jury could find that these facts satisfy Veolia’s burden to prove both objective baselessness and subjective bad faith. As will be demonstrated immediately below, Aquatech admits these facts for purposes of summary judgment.

In opposition to Aquatech’s motion for summary judgment, Veolia proffered thirty-five additional material facts, numbered paragraphs 13 through 47. (ECF Nos. 254, 262.) Aquatech did not respond, at all, to paragraphs 20 through 47 of Veolia’s additional facts and, therefore admits these facts for the purpose of deciding the instant motion. (ECF No. 265; ECF

No. 269 ¶¶ 20-47; ECF No. 302 ¶¶ 20-47); LCvR 56E; United States v. Gregg, Civ. No. 12-322, 2013 WL 6498249, at *4 (W.D. Pa. Dec. 11, 2013). These paragraphs set forth the content of the Kiewit Letter, and excerpts of the deposition testimony of various witnesses, including an Idaho Power representative, the author of the Kiewit Letter, Aquatech's project manager for the Idaho Power project, Mukhopadhyay, and Aquatech's patent attorney. Relying upon the evidence set forth in paragraphs 20 through 47, a reasonable jury could find that Aquatech failed to act in good faith with respect to sending the Kiewit Letter.

Although Aquatech did respond to paragraphs 13 through 19 of Veolia's additional material facts, its responses were improper and ineffective. (ECF No. 265 ¶¶ 13-19; ECF No. 269 ¶¶ 13-19; ECF No. 302 ¶¶ 13-19.) These paragraphs relate to excerpts of the deposition testimony, and email communications, of Kiewit and Idaho Power representatives concerning Aquatech's and Veolia's competing bids for the Idaho Power project, and the decision to award the contract to Aquatech. Aquatech's response to each of these paragraphs consists of duplicate statements that a deposition transcript or document is "objectionable hearsay," followed by an assertion that Aquatech "moves to strike" the piece of evidence from the record and that "[a]ny evidence used to support a motion for summary judgment must be admissible." (ECF No. 265 ¶¶ 13-19; ECF No. 269 ¶¶ 13-19; ECF No. 302 ¶¶ 13-19.)

Aquatech's objections cannot be sustained. As an initial matter, hearsay statements can be considered on a motion for summary judgment if they are capable of admission at trial. Shelton v. Univ. of Med. & Dentistry of New Jersey, 223 F.3d 220, 223 (3d Cir. 2000) (citing Stelwagon Mfg. Co. v. Tarmac Roofing Sys., Inc., 63 F.3d 1267, 1275 n.17 (3d Cir.1995)). The witnesses whose deposition testimony is cited by Veolia in paragraphs 13 through 19 could all testify at trial. The witnesses' deposition transcripts could also be used at trial under certain

circumstances. It is worth noting that the court reviewed several transcripts relied upon by Veolia, and they reflect that Aquatech did not object to the witness's testimony on hearsay grounds during the depositions. The Kiewit Letter will be admissible at trial. Barr v. Cnty. of Clarion, 417 F.App'x 178, 180 n.4 (3d Cir. 2011) (where author of letter could testify about its substance at trial, it may be considered on a motion for summary judgment). For at least these reasons, Aquatech's objections are not well-founded. The evidence relied upon by Veolia in paragraphs 13 through 19 is properly considered by the court in determining whether to grant Aquatech's motion for summary judgment.

A reasonable jury, relying upon the evidence set forth by Veolia in paragraphs 13 through 47 of its additional concise statement of material facts, could find that the infringement claims made by Aquatech in the Kiewit Letter were objectively baseless, and subjectively made in bad faith. The counterarguments made by Aquatech in its reply brief about Veolia's cited evidence are fodder for cross-examination and attorney argument, and may affect the weight of the evidence, but they do not require entry of judgment as a matter of law. (ECF No. 264 at 4-5.)

Veolia's contention that Aquatech is barred from arguing that the Kiewit Letter was sent in good faith because Aquatech consulted with counsel is inapposite to disposition of the instant summary judgment motion. (ECF No. 253 at 11 & n.4.) Veolia is correct that this court ruled, at a June 18, 2013 hearing, that because Aquatech resisted certain discovery on the ground that it would not rely upon advice of counsel to establish its good faith in sending the Kiewit Letter, Aquatech could not assert such a defense in this case. (Id.; ECF No. 306 at 9-18.) Aquatech, however, does not contend in its submissions filed in support of its motion for summary judgment on Veolia's state law tort claims that it is relying upon an advice of counsel defense. (ECF Nos. 246, 248-49, 264.) The court, therefore, need not address this issue now.

Because, in opposition to Aquatech's motion for summary judgment, Veolia identifies sufficient evidence in the record to support a reasonable jury finding that Aquatech could not have realistically expected success on the merits of its infringement claim, and that it demonstrated subjective bad faith in asserting its patent rights, Aquatech's motion must be denied. The tortious interference with prospective contract claim pled in Count III must be submitted to a jury for determination.

b. Defamation

Veolia's defamation claim likewise survives summary judgment. Like the tortious interference claim, Veolia's defamation claim is based upon statements made by Aquatech in the Kiewit Letter. (ECF No. 60 ¶¶ 100-110.) As an initial matter, the legal principles concerning patent law preemption set forth above apply to state law claims of defamation. Contech Stormwater Solutions, Inc. v. Baysaver Technologies, Inc., 310 F.App'x 404, 408-09 (Fed. Cir. 2009). Veolia contends, however, that the preemption doctrine does not apply to its defamation claim, as a factual matter, because the defamation claim is based upon Aquatech's statements in the Kiewit Letter about the validity of the Tao Patent and Veolia's patent rights, not Aquatech's statements in that letter about the validity or infringement of Aquatech's own HERO Patent. (ECF No. 253 at 9-10; ECF No. 60-6 at 2-3.) According to Veolia, while the preemption doctrine requires Veolia to prove that Aquatech acted in bad faith in communicating to the market about Aquatech's patent rights and Veolia's infringement of them, Veolia need not establish bad faith to the extent Aquatech was communicating to the market about the strength and validity of Veolia's patent rights.

Aquatech failed to respond to Veolia's legal position in its reply brief. (ECF No. 264.) Veolia's argument, on its face, appears to be legally plausible based upon the record developed at summary judgment. If the court adopted Veolia's position, Veolia could prevail on its defamation claim without producing evidence that Aquatech failed to act in good faith when it sent the Kiewit Letter. By failing to address, even in the alternative, Veolia's contention that the preemption doctrine does not apply to its defamation claim, Aquatech could be deemed to concede the issue.

This court need not presently decide whether to adopt Veolia's legal position, however, because even if the preemption doctrine applied and Veolia was required to prove that Aquatech did not send the Kiewit Letter in good faith, Veolia presented sufficient evidence to permit a reasonable jury to make that finding. The same evidence reviewed and relied upon by the court in assessing the viability of Veolia's tortious interference claim is equally applicable here. See supra Sec. III.A.2(a). Therefore, even if federal preemption applied to the defamation claim asserted in Count IV, a reasonable jury could conclude that Aquatech failed to act in good faith with respect to the Kiewit Letter. The defamation claim must be submitted to a jury for determination.

3. Damages

Aquatech argues, in the alternative, and somewhat by implication, that it is entitled to judgment as a matter of law on both of Veolia's state law tort claims because Veolia cannot prove that it suffered damages as a result of the Kiewit Letter. Aquatech's brief in support of its motion for summary judgment on Veolia's state law claims includes a single statement that Veolia "can prove no damages which are proximately caused" by the Kiewit Letter. (ECF No. 248 at 3.) No further factual support or argument on this point can be found in

Aquatech's brief. Paragraphs 10 through 12 of Aquatech's concise statement of material facts, however, cite evidence indicating that Veolia would have realized a net loss on the Idaho Power project. (ECF No. 269 ¶¶ 10-12; ECF No. 302 ¶¶ 10-12.) In these paragraphs, Aquatech cites to the testimony of John Santelli ("Santelli"), Veolia's Rule 30(b)(6) witness on the issue of damages caused by the Kiewit Letter, and to a Veolia Internal Price Analysis Form used during his deposition. (ECF No. 269 ¶¶ 10-12; ECF No. 302 ¶¶ 10-12.)³ In its reply brief, Aquatech contends that Veolia wrongfully opposes summary judgment by submitting a sham declaration from Santelli indicating that Veolia lost more than \$1 million in profit on the Idaho Power project. (ECF No. 264 at 5-10; ECF No. 269 ¶11; ECF No. 302 ¶ 11.)

As an initial matter, although Aquatech fails to cite any pertinent legal authority, there can be no dispute that damages is an element of Veolia's tortious interference with prospective contract and defamation claims. Walnut Street Associates, Inc. v. Brokerage Concepts, Inc., 982 A.2d 94, 100 n.6 (Pa. Super. Ct. 2009) (stating that elements of a tortious interference with prospective contract claim in Pennsylvania include "pecuniary harm resulting from the loss of the benefits of the relation," citing Restatement (Second) of Torts § 766B); Joseph v. The Scranton Times L.P., 959 A.2d 322, 344 (Pa. Super. Ct. 2008) (stating that damages must be proven in a defamation case). It follows, therefore, that if Veolia fails to present evidence that it suffered damages, then judgment as a matter of law in Aquatech's favor on Counts III and IV would be proper. Celotex, 477 U.S. at 322-23. The record, however, includes ample evidence that Veolia would have realized a profit from the Idaho Power project.

³ The court will assume for purposes of discussion only, that Aquatech's citation to this evidence in its concise statement of material facts satisfies its obligations with respect to properly raising an issue for determination on summary judgment, even though Aquatech, in its opening summary judgment brief, does not provide any applicable legal authority or argument in support of its request that judgment as a matter of law be entered based upon a lack of damages. FED. R. CIV. P. 56.

Santelli testified at his deposition, as Veolia's corporate representative, that under a specific price model Veolia would have lost money on the Idaho Power project. (ECF No. 269 ¶ 11; ECF No. 302 ¶ 11.) Following preparation of Santelli's deposition transcript, Veolia submitted an errata sheet, statement of reasons, and corrected transcript to Aquatech's counsel, with supplemental Rule 26(a)(1) disclosures. (ECF No. 262-2 and -5.) Those submissions indicated that Santelli's deposition testimony concerned internal calculations and included an error about profit, and that, in fact, Veolia would have earned more than \$1 million in profit on the Idaho Power project. (Id.; ECF No. 253 at 8 n.3.) Santelli's errata sheet was submitted to Aquatech on January 27, 2014, which is more than nine months before any summary judgment motions were filed. (ECF No. 262-2 and -5.) According to Aquatech, however, the errata sheet is a nullity because it was submitted in violation of Rule 30(e). (ECF No. 264 at 5-6.)

Santelli also submitted a declaration in support of Veolia's opposition to Aquatech's motion for summary judgment, which reiterates the statements made in his errata sheet, i.e., that Veolia would have realized more than \$1 million in profit on the Idaho Power project. (ECF No. 262-4.) Aquatech contends that this declaration is a sham affidavit because it directly contradicts Santelli's deposition testimony. (ECF No. 264 at 6-10.) Under the sham affidavit doctrine, "a court will disregard an affidavit that is inconsistent with an affiant's prior deposition testimony ... unless the party relying on the affidavit in opposition to the motion can present a legitimate reason for the discrepancies between the deposition and the affidavit." Smith v. Johnson and Johnson, 593 F.3d 280, 285 n.3 (3d Cir. 2010); see Cleveland v. Policy Mgmt. Sys. Corp., 526 U.S. 795, 806-07 (1999); Jiminez v. All American Rathskeller, Inc., 503 F.3d 247, 251 (3d Cir. 2007).

Federal Rule of Civil Procedure 30(e) permits a deponent to make changes and corrections to his or her deposition transcript. FED. R. CIV. P. 30(e). The rule has several requirements, including that the witness reserve the right at the end of the deposition to review the transcript, changes be made within thirty days after being notified that the transcript is available for review, and the proposed changes be accompanied by a statement of reasons. EBC, Inc. v. Clark Bldg. Sys., Inc., 618 F.3d 253, 265-66 (3d Cir. 2010). Under appropriate circumstances, a district court may extend the thirty-day deadline and craft remedial measures, such as reopening the deposition to permit the witness to be questioned about the changes and shifting costs. Id. at 266-67 & n.12. There is no restriction on the kind of changes that can be made. The earlier testimony, however, is not expunged from the record, which may subject the witness to cross-examination and impeachment if the deposition testimony is substantively altered through submission of an errata. Id. at 267.

Although Aquatech asserts that Santelli's errata sheet is a nullity under Rule 30(e), it failed to provide this court with the information needed to decide this issue. For instance, although Aquatech states in its brief that Santelli failed to submit his errata sheet within thirty days of July 10, 2013, the date on which his deposition transcript was purportedly sent to him, it submits no evidence of this fact. (ECF No. 264 at 5.) Aquatech did not provide a copy of the transcript so that the court can determine whether Santelli reserved his right to review the transcript. Based upon the record that Aquatech created, this court is unable to make the necessary findings in order to invalidate Santelli's errata under Rule 30(e). In reaching this conclusion, the court notes that Aquatech submitted no evidence that it objected to Santelli's errata when it was received in January 2014, or asked Veolia to produce Santelli for a further deposition to discuss the changes he made in it. Aquatech made no submissions to this court

about Santelli's errata until almost a year after it was received, and in connection with summary judgment briefing. In any event, failure to comply with all the technical requirements of Rule 30(e) does not automatically result in exclusion of a deponent's errata sheet; the district court always retains the power to craft appropriate remedial measures. EBC, 618 F.3d at 266-67 & n.12.

The district court also retains the discretion to permit Santelli to clarify his deposition testimony, whether through an errata or a declaration, if there is sufficient justification or explanation for doing so and the clarification is not "squarely contradictory" of the deposition testimony. Id. at 268-70. Veolia explains that Santelli's deposition testimony concerned internal accounting calculations that were not representative of actual profits, and that Aquatech did not pose pointed questions to Santelli about actual profit calculations at his deposition. (ECF No. 253 at 8 n.3.) Aquatech failed to respond to Veolia's proffered explanation in its reply brief. (ECF No. 264.) In its reply brief, Aquatech, instead, reproduced a portion of Santelli's deposition testimony that is actually supportive of Veolia's explanation. This exchange reflects that Santelli was testifying about "business margin," not "gross profit," when he agreed with the questioner that "in this pricing model" Veolia "would have taken a loss" on the Idaho Power project. (ECF No. 264 at 8-9.) Santelli's errata sheet and declaration, which clarify the scope and meaning of Santelli's statements about margins, profits, and pricing models, cannot be characterized as contradicting his deposition testimony.

Notably, Santelli's errata and declaration rely upon the same Veolia pricing analysis form that he was questioned about at his deposition. (ECF No. 262-4.) Santelli did not "generate from whole cloth" new pricing data, but instead offered further clarification about how that data should be interpreted, both from an internal accounting standpoint, and a profit standpoint. EBC,

618 F.3d at 267-68. The pricing analysis form was produced in discovery, and was available to Aquatech throughout this litigation. Aquatech can claim no unfair surprise or prejudice from Santelli's testimony.

On the record before the court, Santelli's testimony about lost profits cannot be found to be improper, whether analyzed under Rule 30(e) or the sham affidavit rule. The court will not strike either form of testimony for purposes of deciding the instant summary judgment motion. EBC, 618 F.3d at 270. The fact-finder will decide what weight to assign to Santelli's damages testimony under the circumstances. The court cannot make that determination on the record developed for the motions for summary judgment without making credibility and fact determinations, which a court is not permitted to do.

Through Santelli's deposition testimony, as amended by the errata, and his declaration, Veolia proffers sufficient evidence that it suffered damages as a result of not being awarded the Idaho Power project. Veolia's state law tort claims, therefore, are not subject to adverse judgment as a matter of law on this basis.

B. Veolia's Motion - Infringement

Veolia asks this court to enter judgment as a matter of law in its favor on the issue of infringement of the '255 Patent and the '456 Patent. (ECF No. 241.) Infringement of these patents is raised by Veolia in its declaratory judgment claims and by Aquatech in its counterclaims. Count I of Veolia's amended complaint seeks a declaratory judgment that its OPUS process does not infringe either patent. (ECF No. 60 ¶¶ 72-76.) Aquatech's counterclaims assert that Veolia infringes both patents. (ECF No. 63 at 18-20.) The accused processes are the OPUS systems installed by Veolia at projects for Molycorp Minerals LLC ("Molycorp"), Plains

Exploration and Production Company (“PXP”), and Kennecott Eagle Minerals Company (“Kennecott”). (ECF No. 267 ¶ 12.)

Aquatech’s technical expert witness, R. Reams Goodloe (“Goodloe”), analyzed water chemistry data for each of these three OPUS systems, produced expert reports setting forth the results of his testing and his conclusions, and testified about them at his deposition. (*Id.* ¶¶ 14-15, 19-20, and 24-25.) Veolia agrees that Goodloe’s water chemistry data analysis is central to determining whether infringement can be decided as a matter of law. (ECF No. 243 at 6.) With the exception of the Kennecott project, this court finds that it cannot be.

1. Preliminary Matters

a. Asserted Claims

As an initial matter, the court must address an apparent dispute about the claims that are at issue in this case. Although in response to paragraph 10 of Veolia’s concise statement of material facts, Aquatech states that “there are now six claims of the ’255 HERO Patent asserted in this infringement action,” in response to paragraphs 6 and 7 of that same document, Aquatech refuses to admit that it withdrew all infringement claims under the ’456 Patent and all claims under the ’255 Patent except for claims 98, 101, 106, 107, 108, and 111. (ECF No. 267 ¶¶ 6-7, 10.) Aquatech insists, instead, that claims 98, 101, 106, 107, 108, and 111 of the ’255 Patent are merely “representative claims” that were selected “as part of normal case-specific tailoring” and “case management.” (*Id.* ¶¶ 6-7; ECF No. 259 at 2 & n.2.) Aquatech identifies no case management order that states that this case would be tried in phases or by way of representative claims. Aquatech provides no further argument about, explanation of, or legal support for its position. To the extent Aquatech intends to assert that additional proceedings will

be required after infringement and validity decisions are reached about these six allegedly representative claims, the court is compelled to address this matter now.

Aquatech originally asserted that Veolia's OPUS process infringed 73 claims of the '255 Patent and 22 claims of the '456 Patent. (ECF No. 267 ¶ 5.) Early in the litigation, prior to claim construction, Veolia filed a motion to limit the number of asserted claims. (ECF No. 93.) The court appointed a special master to meet with the parties and issue a recommendation to the court regarding the appropriate number of claims to be asserted and number of claim terms to be construed in this case. (ECF No. 97 ¶¶ 3-4.) The parties notified the court, on May 4, 2012, that they met with the special master and "reached agreement regarding the number of claims in dispute and claim terms for construction." (*Id.* ¶ 5.) In the May 4, 2012 notice, Aquatech reserved the right under Local Patent Rule 3.7 to "amend [its] infringement contentions, including the number of claims asserted, *upon a showing of good cause*," and Veolia reserved the right "to object to any such motion." (*Id.* at 2 n.1 (emphasis added).) A patent holder always has the right under this court's local rules to seek leave of court, upon a showing of good cause, to amend its infringement contentions. Sightsound Technologies, LLC v. Apple Inc., No. 11-1292, 2013 WL 203537, at *2-3 (W.D. Pa. Jan. 17, 2013). Aquatech's reservation of rights to do so is therefore not probative of its current position that this case was proceeding by way of representative claims. On May 11, 2012, the parties filed an amended joint disputed claim terms chart, listing twelve disputed claim terms from three asserted claims of the '255 Patent (claims 95, 98, and 111), and one asserted claim of the '456 Patent (claim 1). (ECF No. 99-1.) The filing does not indicate that the claim terms to be construed were representative. The court thereafter denied Veolia's motion to limit the number of asserted claims as moot based upon the parties' agreement. (6/22/12 Text Order.) This procedural history includes no suggestion that Aquatech

asked this court to enter case management orders selecting “representative claims as part of normal case-specific tailoring.” (ECF No. 267 ¶¶ 6-7; ECF No. 259 at 2 & n.2.)

If the procedural history left any doubt, which it does not, Aquatech’s own statements contradict its present assertion that claims 98, 101, 106, 107, 108, and 111 of the ’255 Patent were being litigated as representative claims. By letter dated May 30, 2013 and addressed to Veolia’s counsel, counsel for Aquatech confirmed that Aquatech was asserting claims 98, 101, 106, 107, 108, and 111 of the ’255 Patent and withdrawing its infringement claims with respect to the ’456 Patent. (ECF No. 247-1 at 20.) The letter bears no indication that the six claims listed were representative claims, or that further proceedings would follow trial on the six listed claims. Aquatech’s technical expert, R. Reams Goodloe, proffered an opinion only about claims 98, 101, 108, and 111 of the ’255 Patent. (ECF Nos. 202-1 to -3.) A patentee’s announcement that it is no longer pursuing particular claims, coupled with ceasing to litigate them, is sufficient to remove those claims from the case. SanDisk Corp. v. Kingston Tech. Co., 695 F.3d 1348, 1353 (Fed. Cir. 2012). No formal motion or stipulation is required. Alcon Research Ltd. v. Barr Laboratories, Inc., 745 F.3d 1180, 1193 (Fed. Cir. 2014).

Aquatech cannot now, following summary judgment proceedings, or at trial, assert additional claims of the ’255 Patent or any claims of the ’456 Patent against Veolia in this lawsuit. Contrary to Aquatech’s current position, there is no indication on the record that, as a matter of “case management” or “normal case-specific tailoring,” this case was proceeding in phases, based upon representative claims. Neither party notified the court at any time that further claim construction or sequential trials would be required to address the remaining claims originally asserted by Aquatech. In fact, as demonstrated above, the record reflects the opposite. Aquatech never requested a case management plan in which certain representative or test claims

would be initially considered. In re Katz Interactive Call Processing Patent Litig., 639 F.3d 1303, 1310-13 (Fed. Cir. 2011). It is too late for Aquatech to seek the benefit of such case management tools now.

From a legal standpoint, it is too late for Aquatech to assert additional claims against Veolia in this case. Under this court's local patent rules, this court retains the discretion to permit parties to assert additional claims, via amendment to the infringement contentions. LPR 3.7. As a case advances toward trial, however, leave to amend is less likely to be granted. Wonderland NurseryGoods Co. v. Thorley Indus., LLC, No. 12-196, 2014 WL 199789, at *3 (W.D. Pa. Jan. 17, 2014) (collecting decisions). In this case, Aquatech never sought leave to assert additional claims. If Aquatech attempted to do so now, it would face a likely insurmountable burden to justify the amendment at this juncture in the case.

Summary judgment motions are fully briefed, and following their resolution, this case will be ready for trial. Claims 98, 101, 106, 107, 108, and 111 of the '255 Patent are the only claims at issue in this case. For the reasons set forth above, Aquatech's attempts to suggest, in opposition to a motion for summary judgment, that these six claims were merely representative claims fail, under both the facts and the law.

b. Scope of Opinion

Throughout Veolia's briefing in support of its motion for summary judgment of noninfringement, Veolia asks this court to enter broad rulings and judgments about the '255 Patent, and about its OPUS systems, equipment, and promotions. (ECF No. 243 at 18-20.) Much of this argument is superfluous given that the only infringement question that can be decided as a matter of law concerns the Kennecott project. The court, however, is keenly aware that, even though Veolia may not be transparent about its arguments, Veolia is seeking rulings and

judgments in this case that might foreclose, or at least affect, pending, or future, lawsuits about Veolia's OPUS process and Aquatech's HERO patents.⁴ The only issues presently before this court, however, are whether a reasonable jury could conclude that the OPUS systems installed at Molycorp, PXP, and Kennecott infringe claims 98, 101, 106, 107, 108, and 111 of the '255 Patent. This court's rulings must be confined to those issues. Arguments about, for example, claim splitting, compulsory counterclaims, and the effect of any judgment in this case on later litigation are not properly made at this time and in this context. (ECF No. 243 at 18-20.)

Similarly, Veolia's request that this court enter judgment as a matter of law that the OPUS systems do not infringe the '456 Patent is improper on this summary judgment record. (ECF No. 243 at 18; ECF No. 60 at 13; ECF No. 63 at 19-20.) Even though this court finds that Aquatech cannot now dispute that it "withdrew all infringement claims under the '456 Patent" (ECF No. 263-1 at 3), it does not follow that judgment as a matter of law should be entered with respect to infringement of that patent. Alcon, 745 F.3d at 1193 (a court should not render judgment with respect to claims referenced in a complaint, but not raised in a pretrial statement, or litigated at trial).⁵ Moreover, there is insufficient information in the record about the circumstances under which the '456 Patent was withdrawn to determine the proper procedural mechanism by which to dispose of the infringement claims involving that patent. See e.g.,

⁴ One such lawsuit is the related proceeding pending before this court at 13-cv-911, captioned Aquatech International Corporation and Debasish Mukhopadhyay v. Veolia Water West Operating Services, Inc. and Veolia Water North America Operating Services, LLC. This court dismissed another related lawsuit in July 2013 due to a lack of jurisdiction under the Declaratory Judgment Act. Aquatech International Corporation and Debasish Mukhopadhyay v. N.A. Water Systems, LLC and Veolia Water Solutions & Technologies Support, No. 12-435, 2013 WL 3972625 (W.D. Pa. July 31, 2013).

⁵ Even though the Alcon decision recognizes that judgment may be warranted when an accused infringer asserts a declaratory judgment claim of noninfringement, evidence or argument on the merits of that claim still must be entered into the record to justify the judgment. Alcon, 745 F.3d at 1193. The record presented to this court on summary judgment does not include any evidence about the '456 Patent, making entry of judgment improper in any event.

Dodge-Regupol, Inc. v. RB Rubber Prods., Inc., 585 F.Supp.2d 645, 650-55 (M.D. Pa. 2008)

(citing decisions, and discussing circumstances under which subject-matter jurisdiction is eliminated under the Declaratory Judgment Act, making it appropriate to dismiss infringement claims with prejudice). For this reason, Veolia's motion for entry of judgment as a matter of law in its favor with respect to infringement of the '456 Patent, must be denied. By ruling in this manner, the court does not suggest that Aquatech may revive its infringement claims under the '456 Patent at this juncture. The court's conclusion is based upon the failure of the factual record or the legal briefing to provide the court with the necessary information to rule on the issue.

2. Infringement of the '255 Patent

Aquatech accuses Veolia of infringing claims 98, 101, 106, 107, 108, and 111 of the '255 Patent. Claim 98 is an independent process claim and the remaining five claims depend from it. Claim 98 reads:

98. In a process for the purification of an aqueous solution through a semi-permeable membrane in membrane separation equipment to produce a product stream, and retaining at least a portion of said aqueous solution in said membrane separation equipment to increase the concentration of a solute to a preselected concentration factor in said retained portion of said aqueous solution,

the improvement which comprises feeding said membrane separation equipment with an aqueous solution characterized at the time of initial entry into said membrane separation equipment, by comprising

- (a) minimizing hardness,
- (b) minimizing alkalinity associated with hardness,
- (c) minimizing dissolved or suspended carbon dioxide
- (d) a pH of at least 8.5; and wherein TOC is rejected by said semi-permeable membrane by at least 95%.

(ECF No. 60-2 at 34.)

Veolia contends that it is undisputed that the OPUS systems installed at Molycorp, PXP, and Kennecott do not perform the “minimizing hardness” or “minimizing alkalinity associated with hardness” limitations of claim 98. (ECF No. 243 at 7-16.) Veolia additionally asserts that it is undisputed that the OPUS system installed at Kennecott does not perform the “wherein TOC is rejected by said semi-permeable membrane by at least 95%” limitation of claim 98. (Id. at 16-18.) The court will address these contentions in reverse order because the Kennecott-specific argument is the only one that warrants entry of judgment as a matter of law.

a. Reject TOC by at least 95% (Kennecott Only)

According to Veolia, no reasonable jury could find that the Kennecott OPUS system rejects TOC by at least 95%, as required by claim 98(d). (ECF No. 243 at 16.) In opposition, Aquatech contends that the undisputed record reflects that the Kennecott OPUS system meets this claim element. (ECF No. 359 at 6.) The conflict between the parties on this infringement question centers around a single question: When must the amount of TOC rejected be measured? Veolia asserts that the measurement must be made after the first pass RO system. (ECF No. 243 at 16-17; ECF No. 247-1 at 38 (referring to Point F).) Aquatech asserts that the measurement must be made after the second pass RO system. (ECF No. 259 at 6; ECF No. 304-9 ¶¶ 58-60.) Aquatech’s position contradicts the plain language of claim 98, and must be rejected for that reason. It follows that judgment as a matter of law must be entered in Veolia’s favor on this discrete infringement issue.

Aquatech contends that “use of the open ended term comprising does not limit claim 98 to use of a single-pass reverse osmosis system in order to reach the claimed rejection of TOC.” (ECF No. 259 at 6.) In other words, Aquatech argues that because claim 98 uses the word “comprises,” claim 98 can be infringed by a single-, double-, or multiple-pass reverse osmosis system. (ECF No. 304-9 ¶ 59.) Aquatech made a similar attempt to expand the scope of a claim based upon the draftsman’s use of the term “comprising” during claim construction in a related case pending before this court. (13-911, ECF No. 49 at 12, 13-14.) As the court explained in rejecting Aquatech’s arguments in that case, although the term comprising “is well understood to mean ‘including but not limited to’” and permits the addition of elements not required by a claim, those presumptions can be overcome by considerations of “logic or grammar.” (*Id.* at 13, citing Exergen Corp. v. Wal-Mart Stores, Inc., 575 F.3d 1312, 1319 (Fed. Cir. 2009); Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1409 (Fed. Cir. 2004); Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003)). Logic, grammar, and fundamental rules of claim drafting and construction again defeat Aquatech’s argument here.

For purposes of interpreting the claims of a patent, the subsequent use of the definite article “said” refers back to the same claim term used earlier in the claim. Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1342 (Fed. Cir. 2008); Optimize Tech. Solutions, LLC v. Staples, Inc., No. 11-419, 2013 WL 6170624, at *29 (E.D. Tex. Nov. 20, 2013). The definite article “said” appears seven times in claim 98. Twice it modifies “aqueous solution,” once it modifies “retained portion,” and three times it modifies “membrane separation equipment.” In the claim limitation at issue – “wherein TOC is rejected by said semi-permeable membrane by at least 95%” – the article “said” modifies “semi-permeable membrane.” This drafting and grammatical structure reflects that the word “said” is used in claim 98 in its

commonly-accepted manner to refer back to an item or structure that was previously-mentioned in the claim.

The first and only other time that “semi-permeable membrane” appears in claim 98 is as part of the phrase “a semi-permeable membrane in membrane separation equipment.” The “membrane separation equipment” is identified in the second line of claim 98, and is referred back to three more times as “said membrane separation equipment.” Therefore, the “semi-permeable membrane” associated with the 95% TOC rejection claim limitation is the same “semi-permeable membrane” that is “in” the “membrane separation equipment” that is referred to throughout claim 98. Given this structure, claim 98 discloses one particular membrane that is located within one particular piece of membrane separation equipment.

The appearance of the word “comprising” cannot convert a claim in which a particular membrane in a particular piece of equipment causes TOC to be rejected by at least 95% into a claim that allows two, three, or ten unidentified membranes to satisfy that 95% TOC rejection requirement. Aquatech’s argument, which is based solely and summarily on the fact that the word “comprising” appears in claim 98, ignores the repeated, and consistent, use of the article “said” in claim 98, and the legal principles that apply to the use of that definite article for purposes of interpreting patent claims. Aquatech’s position, therefore, must be rejected.

The court concludes that the amount of TOC rejected must be measured after the first pass RO system. Claim 98 of the ’255 Patent requires that TOC be rejected by at least 95% at this point of measurement. There is no factual dispute in the record that TOC is not rejected by at least 95% in the Kennecott OPUS system when measured at the first pass RO system. Goodloe, Aquatech’s expert witness, opines that the 95% TOC rejection requirement is accomplished in the Kennecott OPUS system “by the Second Pass RO,” and agrees that when

the measurement is made after the first pass RO system, TOC is not rejected by at least 95% in the Kennecott OPUS system. (ECF No. 243 at 16-18; ECF No. 267 ¶¶ 28-30 (citing Goodloe deposition testimony); ECF No. 301-2 ¶ 30; ECF No. 304-9 ¶¶ 56-60; ECF No. 247-1 at 34.) It follows that no reasonable jury could find that the OPUS system installed at Kennecott infringes claim 98 of the '255 Patent, or any of the other asserted claims which depend from it.

Judgment as a matter of law, therefore, must be entered in Veolia's favor with respect to infringement of the asserted claims of the '255 Patent by the OPUS system installed at Kennecott.

b. Minimizing Alkalinity Associated with Hardness (Molycorp, PXP, and Kennecott)

Veolia contends that no reasonable jury could find that the accused OPUS systems infringe any of the asserted claims of the '255 Patent because they do not perform the step of "minimizing alkalinity associated with hardness," as required by claim 98(b). (ECF No. 243 at 7-16.) Veolia asserts that Goodloe's testing, as reflected in various water chemistry data charts included in his expert report, indicates that instead of being "minimized," alkalinity actually increases in the OPUS systems installed at Molycorp, PXP, and Kennecott, making it impossible for a reasonable jury to find infringement. (ECF No. 243 at 8-9, 11-12, and 14-15.) In response, Aquatech points out that when Goodloe's charts are viewed in their entirety and are properly interpreted, there is no dispute that the "alkalinity associated with hardness" decreases in all three OPUS systems, allowing a reasonable jury to conclude that it has been "minimized." (ECF No. 301 at 3-4, 12-25.)

With respect to this infringement issue, the critical dispute is how the “alkalinity associated with hardness” is determined. Veolia asserts that this court’s claim construction opinion is dispositive and that alkalinity associated with hardness is the amount of alkalinity in any particular solution sample, without regard to what other particles may be present in that solution. (ECF No. 243 at 7-9, 11-12, and 14-15.) Aquatech contends that alkalinity associated with hardness is the smaller of the amount of alkalinity or the amount of hardness in a particular solution sample. (ECF No. 301 at 13-14; ECF No. 263 at 12-13.)

As an initial matter, the court disagrees that the claim construction opinion is dispositive of this infringement issue. In that opinion, the court construed the claim phrase “alkalinity associated with hardness” to mean “alkalinity in solution with hardness.” (ECF No. 127 at 16-19 and 30-31.) Aquatech asserted, during claim construction proceedings, that the phrase did not require construction, and Veolia proposed that the phrase be construed to mean “alkalinity ions that are or were previously ionically bound with hardness ions.” (*Id.* at 16 (emphasis added).) At the claim construction hearing, the parties disputed whether alkalinity ions and hardness ions had to be ionically bound to each other, as opposed to “dissolved,” “associated,” or “floating around” in solution, and at what point in time the relationship between the ions should be determined. (ECF No. 125 at 53-54, 76-77, 93-94, and 134-40.) The court’s claim construction opinion rejected the notion that the term “bound” was of particular significance to construing the disputed claim phrase “alkalinity associated with hardness,” and noted that the parties agreed that alkalinity is “in solution with” hardness. (ECF No. 127 at 17-19.) The opinion deferred questions about when the ions should be measured until the infringement stage of the case. (*Id.* at 19.)

With respect to the term “minimizing,” in the claim phrase “minimizing alkalinity associated with hardness,” the court rejected the parties’ arguments that “minimizing” should be construed to mean a measurement of zero, or a particular Langelier Saturation Index (“LSI”) value, and instead adopted the plain and ordinary meaning of the word, i.e., to “reduc[e], as much as possible.” (*Id.* at 26-27 (citing Webster’s Third New International Dictionary (Philip Babcock Gove et al., eds., 1993)).)

The question of precisely how “alkalinity associated with hardness” should be measured in a solution sample was not before the court during claim construction, but is now critical to Veolia’s summary judgment motion. Veolia, relying entirely on the court’s claim construction opinion, contends that “alkalinity associated with hardness” is the amount of alkalinity in a given water sample, because that alkalinity is, by definition, “in solution with hardness.” (ECF No. 243 at 8-9, 11-12, and 14-15.) According to Veolia, Goodloe’s water chemistry data charts demonstrate that the amount of alkalinity in the accused OPUS systems increases, making it impossible for any reasonable jury to find infringement of a claim that requires that alkalinity be minimized, or reduced.⁶ (ECF No. 243 at 9, 12, and 15.) In its summary judgment papers, Veolia proffers no testimony, expert or otherwise, to support its contention that this interpretation of Goodloe’s water chemistry data charts is correct.

⁶ Aquatech’s purported factual disputes about what certain documents were entitled, when they were produced, or when they were final are irrelevant to the instant motion. The parties agree that the water chemistry data charts prepared by Goodloe and reproduced in his expert report are central to deciding this infringement question. (ECF No. 243 at 8, 11, and 14; ECF No. 301 at 13-14.)

In opposition to Veolia’s motion for summary judgment, Aquatech contends that “alkalinity associated with hardness” is not the amount of alkalinity measured in a water sample, but is instead represented by the smaller of the amount of alkalinity or the amount of hardness measured in a particular sample. (ECF No. 301 at 13-14; ECF No. 263 at 12-13.) Aquatech supports this position with the expert reports and testimony of Goodloe. Aquatech’s current position is consistent with arguments it made during claim construction. In its responsive claim construction brief, Aquatech explained that “the lesser of the two numbers (where one is the hardness and the other is the alkalinity) always quantifies the... alkalinity associated with hardness.” (ECF No. 103 at 21.) Veolia did not respond to this explanation in its reply claim construction brief. (ECF No. 116).

A set of illustrations demonstrates the inherent flaw in Veolia’s position. Under Aquatech’s approach, if a sample has 20 alkalinity ions and 7 hardness ions, the “alkalinity associated with hardness” is 7 alkalinity ions (with 13 alkalinity ions *not* associated with hardness). If a sample measured 6 alkalinity ions and 25 hardness ions, the “alkalinity associated with hardness” is 6 alkalinity ions (with 0 alkalinity ions *not* associated with hardness). In these examples, under Veolia’s approach, the “alkalinity associated with hardness” in the first sample would be 20 and in the second sample would be 6. Veolia’s approach, in effect, renders the qualifier “associated with hardness” in claim 98(b) meaningless, because the alkalinity measurement is always determined without reference to the hardness measurement. For this reason alone, Veolia’s approach cannot be the correct approach.

Contrary to Veolia’s contention, Aquatech’s approach is not faulty because it renders the step of “minimizing hardness” in claim 98(a) superfluous. (ECF No. 263 at 12-13.) Again, by way of illustration, in the first example, 7 hardness ions would be minimized as

required by claim 98(a), and 7 alkalinity ions would be minimized as required by claim 98(b). In the second example, however, 25 hardness ions would be minimized as required by claim 98(a), and 6 alkalinity ions would be minimized as required by claim 98(b). Aquatech's approach may sometimes result in the same amount of alkalinity and hardness ions being minimized, but, as a rule, the amounts are not required to be the same.

If Veolia's approach is used, then there is no dispute that the alkalinity associated with hardness increases in all three accused OPUS systems, making it impossible for a reasonable jury to conclude that the OPUS systems infringe patent claims that require alkalinity associated with hardness be minimized. Veolia's motion for summary judgment would have to be granted. If Aquatech's approach is used, then there is no dispute that the alkalinity associated with hardness decreases in all three accused OPUS systems, making it possible for a reasonable jury to conclude that the OPUS systems infringe patent claims that require alkalinity associated with hardness be minimized. Veolia's motion for summary judgment would have to be denied, so that a jury could determine if the measured decreases meet the claim limitation of "minimizing."

Aquatech's approach is logically sound, and is the only one supported by any evidence at this juncture. Veolia's approach consists of nothing more than a technical and overly-broad reliance on this court's claim construction, which was based upon an admission from both parties that the alkalinity is always in solution with hardness when it is measured in a reverse osmosis system. (ECF No. 127 at 19.) It is now apparent that the parties' admission was not necessarily probative of any pertinent infringement issue. This court's resulting claim construction did not address how alkalinity associated with hardness would be measured in order

to assess infringement, and specifically deferred that question to the infringement stage of this case. (Id. at 18.) Veolia came forth with no method by which to measure alkalinity associated with hardness, other than to posit, primarily as a matter of semantics and logic, that because the alkalinity of a water sample is always in solution (i.e., water), the alkalinity associated with hardness equates to alkalinity. (ECF No. 243 at 8-9, 11-12, and 14-15.) In comparison, Aquatech consistently maintained that alkalinity associated with hardness is the smaller of the alkalinity measurement or the hardness measurement in a given sample, and supported its position with expert testimony. (ECF No. 103 at 21; ECF No. 263 at 12-13; ECF No. 301 at 13-14.)

Under these circumstances, the court adopts Aquatech's approach to determining what amount of alkalinity is associated with hardness. When Aquatech's approach is applied, the undisputed record reflects that the alkalinity associated with hardness is reduced by the OPUS systems at Molycorp, PXP, and Kennecott. (ECF No. 247-1 at 59, 61, 63.) At Molycorp, the alkalinity associated with hardness decreases from 4.0376 meq/L to .0077 meq/L, or by 99.998%. (ECF No. 247-1 at 61.) At PXP, the measurements decrease from 4.7409 meq/L to .0019 meq/L, or by 99.999%. (ECF No. 247-1 at 63.) At Kennecott, the measurements decrease from .8192 meq/L to .0306 meq/L, for a reduction of 99.96%.⁷ The undisputed record reflects that the amount of alkalinity associated with hardness in the OPUS systems decreases by more than 99%. A reasonable jury could conclude that this decrease satisfies the limitation of claim

⁷ Although this court already determined that the OPUS system at Kennecott cannot infringe any asserted claim of the '255 Patent because TOC is not rejected by at least 95% at the first pass RO system, Veolia moved for summary judgment on the "minimizing alkalinity associated with hardness" claim limitation in connection with all three accused OPUS systems. These measurements are therefore worth noting in the interest of completeness.

98(b) of the '255 Patent that “alkalinity associated with hardness” be “minimized,” or reduced as much as possible.⁸

Veolia’s motion for summary judgment on this infringement issue must, therefore, be denied.

c. Minimizing Hardness (Molycorp, PXP, and Kennecott)

Veolia contends that no reasonable jury could find that the accused OPUS systems infringe any of the asserted claims of the '255 Patent because they do not “minimiz[e] hardness,” as required by claim 98(a). (ECF No. 243 at 9-10, 12-13, and 16.) According to Veolia, it is impossible for any reasonable jury to conclude that the accused OPUS systems “reduce, as much as possible, hardness” because Aquatech’s expert witness, Goodloe, conceded at deposition that it is theoretically possible to reduce hardness below the amount found in the RO feedwater of the accused OPUS systems. (ECF No. 243 at 9-10, 12-13, and 16.) In opposition, Aquatech contends that this court did not construe the claim term “minimizing hardness” during claim construction proceedings, and in construing the analogous claim phrase “minimizing alkalinity associated with hardness,” rejected Veolia’s proposals that the word minimize be construed to mean reducing to zero, removing “substantially all” of a particle, or reaching a particular LSI measurement. (ECF No. 259 at 18-19.) According to Aquatech, Goodloe’s testimony establishes that, according to Veolia’s own documents and expert report,

⁸ Although Veolia does not argue that the alkalinity associated with hardness is not “minimized” by the OPUS systems because it is possible to reduce the alkalinity associated with hardness by more than 99.99%, it raises an analogous argument with respect to claim 98(a)’s requirement that hardness be minimized, which is discussed in the next section. The court would reach the same conclusion with respect to minimizing alkalinity associated with hardness as it reaches with respect to minimizing hardness, i.e., that whether something has been “reduced as much as possible” is a jury question.

“in all respects, the claim term ‘minimizing hardness’ has been fully projected to be accomplished” in each of the three accused OPUS systems. (Id. at 19-23.)

As an initial matter, Aquatech is correct that this court was not asked to construe the claim phrase “minimizing hardness” during claim construction. (ECF No. 99-1.) Veolia, however, is correct that the word “minimize” must be construed consistently throughout the ’255 Patent. During claim construction, the court construed the claim phrase “minimizing alkalinity associated with hardness” and, in that context, defined the word “minimizing” to mean “reducing, as much as possible.” (ECF No. 127 at 26-27.) In reaching this construction, the court found that the word “minimizing is a commonly understood word” and consulted the dictionary to arrive at the plain and ordinary meaning of the word. (ECF No. 127 at 26-27.) This definition of the word “minimizing” should apply throughout the claims of the ’225 Patent. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001) (citing decisions and stating that “a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent”). No party offers any evidence or argument with respect to why a different definition of the word minimizing should apply in subsection (a) of claim 98, than in subsection (b) of the same claim. “Minimizing hardness,” therefore, shall be construed to mean “reducing, as much as possible, hardness.”

The factual dispute raised by Veolia’s summary judgment motion is whether “reducing, as much as possible” means that hardness must be at the smallest amount that is technically and theoretically possible, or only at the smallest amount that is practical or feasible. That precise question was not raised during claim construction. During claim construction, however, the court rejected Veolia’s assertions that “minimizing” and “removing substantially all” alkalinity required that alkalinity “be reduced to essentially zero,” or “near zero,” or be

completely eliminated. (ECF No. 101 at 28-31; ECF No. 127 at 19-21.) In doing so, the court summarized passages from the '255 Patent that explained that alkalinity should be reduced to the lowest extent practical or feasible. (ECF No. 127 at 21.) Speaking directly to the patent's requirement that hardness be minimized, the court noted in the claim construction opinion that "nothing in the patents suggests that 'minimizing hardness' necessarily eliminates hardness." (ECF No. 127 at 17-18.) These statements refute Veolia's contention that there can be no infringement because hardness in the accused OPUS systems, theoretically, could be closer to zero.

Under the circumstances, it would be improper for this court to conclude that no reasonable jury could find that hardness has been minimized in the accused OPUS systems simply because Goodloe testified that it is theoretically possible to reduce hardness by more than 99.99%, although it is not practical or feasible to do so. A jury, after being given all the relevant facts, must decide whether or not the OPUS systems meet these "minimizing" claim limitations. In doing so, the jury will be instructed that "minimize" means to reduce as much as possible, but does require that a particle be eliminated or measured at 0% in a sample. Utah Medical Products, Inc. v. Graphic Controls Corp., 350 F.3d 1136, 1381-82 (Fed. Cir. 2003) (finding it proper for a district court to clarify the original intent of its claim construction when changed circumstances, or additional information warrants it).

Veolia's motion for summary judgment on this infringement issue must, therefore, be denied.

C. Aquatech's Motion – Obviousness (and the Motion to Strike Cohen Report)

Aquatech seeks entry of judgment as a matter of law on the ground that Veolia fails to produce any evidence to support its claim that the '255 Patent is obvious. (ECF No. 279.) Aquatech specifically contends that the expert report of Yorum Cohen ("Cohen") does not "provide[] the required analysis for obviousness" and that no fact-finder could rely upon the Cohen report to assess whether any claims of the '255 Patent are obvious. (ECF No. 290 at 3, 17.) In conjunction with this summary judgment motion, Aquatech filed a motion to strike certain portions of Cohen's second supplemental expert report. (ECF No. 277.) Because both motions do no more than raise issues that this court already ruled upon during Daubert proceedings, and prior motion practice, they will be denied.

1. The Second Motion to Strike Cohen's Second Supplemental Report

Aquatech sought to exclude Cohen's expert opinion during Daubert proceedings, on various grounds, and to strike Cohen's reference to fourteen pieces of prior art that he had not previously disclosed. (ECF Nos. 208, 210.) The court overruled each of Aquatech's objections to Cohen's qualifications and to the substance of his expert testimony, but agreed that the newly-cited prior art references should be stricken from Cohen's report. (ECF No. 250 at 9-26.) At the hearing, the court ruled that Cohen could testify about the state of the industry to the extent that he had independent knowledge and experience about those matters, and was able to testify about such matters without reference to or reliance upon the stricken prior art references. (Id. at 19-22.)

Following the Daubert proceedings, and in accordance with the schedule set forth by the court, Aquatech filed a motion for summary judgment in which it argued that Veolia failed to raise a genuine issue of material fact with respect to obviousness of the asserted claims. (ECF No. 242.) Veolia opposed the motion on the ground that Cohen's opinion provided ample

evidence of obviousness, and attached a revised version of Cohen's expert report, which deleted all citations to the fourteen pieces of prior art stricken by this court during Daubert proceedings. (ECF No. 256-58.) The substance of the report, however, was not changed. Aquatech filed a motion to strike the revised expert report on the ground that Cohen could not possibly have personal knowledge of the information that was previously supported by citation to the now-stricken prior art, and that Aquatech had no opportunity to depose Cohen about his revised report before it was submitted in opposition to the summary judgment motion. (ECF No. 272 at 2-3.) The court held a hearing on these matters, and denied the motion to strike Cohen's second supplemental report, but ordered that Cohen be produced for an additional deposition. (3/2/2015 Minute Entry.) Aquatech's motion for summary judgment of nonobviousness was denied, with leave to refile the motion following Cohen's deposition. (Id.)

Aquatech deposed Cohen and refiled its motion for summary judgment on the issue of obviousness, and again filed a motion to strike Cohen's expert report, this time on the ground that Cohen failed to "present knowledge of third party research" at his deposition. (ECF No. 277 at 2.) The legal arguments made by Aquatech in support of this second motion to strike repeat the arguments made by Aquatech in support of its first motion to strike, even though the court already ruled on those issues. (ECF No. 278 at 4-8; ECF No. 250 at 9-26; 3/2/2015 Minute Entry.) The court presumes that this is a drafting error. The court is therefore left to extrapolate from the exhibits attached to Aquatech's second motion to strike that the real basis for Aquatech's motion is that Cohen cannot testify about "his own personal knowledge of the state of the industry" because he was not personally involved in any of the work or experiments described in the fourteen stricken prior art references. (ECF No. 250 at 19; ECF No. 278-5 to -17.)

In opposition to this motion to strike, Veolia argues that Cohen need not have personally worked at a facility or performed an experiment to have “knowledge of the topics addressed in the stricken references,” and points out that Cohen can testify based upon his vast experience in the fields of water treatment technology, membrane science, and chemical engineering for the past 30 years. (ECF No. 288 at 5-6 (emphasis in original).) Veolia cites to portions of Cohen’s recent deposition in which he attests to the fact that he has independent knowledge about the state of the relevant industry, without needing to read or reference the prior art references that were stricken from his report. (Id. at 3-5.) Veolia also argues that the portions of Cohen’s revised report that Aquatech seeks to strike concern technical concepts that are not in dispute, such as the use of RO membranes in water treatment and of resins to remove hardness from water. (Id. at 6-7.)

Although the court cannot rule, at this juncture, on whether or not certain aspects of Cohen’s opinion concern concepts that are in dispute, Aquatech’s motion is nevertheless not well-founded, and must be denied. To the extent that Aquatech objects to Cohen testifying as an expert witness because he lacks personal knowledge about the matters referenced in his revised expert report, the motion is contradicted by the record. The deposition transcript excerpts provided to the court, and the other evidence of record, adequately support Cohen’s proffer that he has personal knowledge about and experience in the water treatment industry, and the methods applied over the years to improve treatment methods. (ECF No. 288 at 3-6.) In that context, Cohen’s purported admissions, relied upon by Aquatech, that he did not personally conduct certain experiments or visit certain locations go to the weight of his testimony, not its admissibility. As the court found at the Daubert hearing, Cohen is qualified to offer expert

testimony in this case. (ECF No. 250 at 26.) Nothing in Aquatech's second motion to strike Cohen's expert report warrants changing that ruling.

The court now turns to Aquatech's request that specific paragraphs, or sentences, be stricken from Cohen's second supplemental expert report because they are no longer supported by citation to a prior art reference. The court compared the current Cohen report to Cohen's prior report and found that in those few instances in which all prior art references were stricken in support of a statement Cohen is discussing his opinion that certain treatment methods were well-known in the industry, and would be known to a person of ordinary skill in the art, such as "weak acid cation ion exchange resin," "a cation exchanger followed by a degasifier," and "ion exchange resins." (ECF No. 272-6 at 8 (end of first full paragraph and second full paragraph) and 15 (second full paragraph); see ECF No. 277-1 (Aquatech's comparison of Cohen's original and revised reports).)⁹ Aquatech will be able to cross-examine Cohen about whether these matters were actually well-known in the industry, to test Cohen's independent, personal knowledge about them, and to present its own evidence about the relevant state of the art in the water treatment industry. Aquatech will also be able to test Cohen's asserted ability to testify about work that took place at specific facilities, e.g., Yuma, Arizona, without referring to a prior art reference to support his alleged personal knowledge. (ECF No. 272-6 at 8.) Although

⁹ The sole exceptions appear on page 15 of the revised Cohen Report, (ECF No. 272-6 at 17 (first full paragraph).) In what can be described as the introduction to the "analysis" section of Cohen's report, Cohen replaces a citation to the stricken Anderson reference with the phrase "and earlier efforts" and removes a citation to the stricken Agui reference in support of his statement that "the research literature" demonstrates TOC rejections in excess of 95% at basic pH. (ECF No. 272-6 at 17 (first full paragraph); compare ECF No. 278-3 at 19 (top of page); ECF No. 272-5 at 2 (table of stricken references).) The court, however, does not deem these changes as significantly affecting Cohen's ultimate opinion, especially given that the key prior art reference, Tao, is still cited in support of these concepts. Regardless, even if this sentence was stricken entirely from the report, Cohen's revised report still contains sufficient discussion and analysis to support his ultimate opinion that the '255 Patent is obvious.

this could very well impeach Cohen's credibility before the jury, it does not make his opinion inadmissible, or improper for purposes of deciding the instant motion for summary judgment.

Aquatech's motion to strike Cohen's second supplemental expert report will be denied.

2. The Merits of Aquatech's Summary Judgment Motion

Aquatech contends that it is entitled to judgment as a matter of law that the asserted claims of the '255 Patent are not obvious. (ECF No. 279.) According to Aquatech, Veolia's validity challenge must fail at summary judgment because the expert report and testimony of Cohen "cannot 'demonstrate by clear and convincing evidence' that a skilled artisan, in 1995, would have had reason to combine the teachings of the prior art references to achieve the claimed invention." (ECF No. 280 at 2.) In its opening brief, Aquatech recasts several of the arguments it made during Daubert proceedings to challenge the admissibility of Cohen's expert report and testimony as now rendering Veolia's invalidity challenge unsupported by sufficient evidence to overcome summary judgment. (ECF No. 280 at 2-7.) Aquatech's reply brief repeats this pattern by recasting still different Daubert arguments as summary judgment arguments. (ECF No. 295 at 6-10.) Aquatech's approach is futile because regardless of the context, the analysis does not change. This court previously rejected Aquatech's arguments that Cohen's report was legally flawed, vague, and improper, and instead ruled that Cohen was qualified to testify at trial with respect to obviousness, and that any perceived defects in his opinions would be fodder for cross-examination. (ECF No. 250 at 24-26.) Aquatech's restatement of arguments that this court rejected during Daubert proceedings, under the guise of a purported evidentiary insufficiency is misguided, and ultimately unsuccessful.

Along these same lines, in its reply brief, Aquatech maintains that its summary judgment motion should be granted because Veolia's invalidity contentions fail to adhere to the requirements of this court's local patent rules and Federal Rule of Civil Procedure 26. (ECF No. 295 at 2-6.) Besides being derivative of the Daubert arguments already advanced by Aquatech in this case, and rejected by this court, such objections are not timely made. Veolia's invalidity contentions were due in June 2011. Daubert proceedings took place in August 2014. The time for raising these objections has passed. Attempting to raise them in a reply brief in support of a renewed motion for summary judgment is without effect.

The remainder of Aquatech's motion amounts to an argument that Veolia's expert (Cohen) is wrong, and Aquatech's expert (Goodloe) is right. (ECF No. 280 at 15-20.) A disagreement between expert witnesses is precisely a circumstance that prevents entry of judgment as a matter of law. B-K Lighting, Inc. v. Fresno Valves & Castings, Inc., 375 F. App'x 28, 32 (Fed. Cir. 2010); Metro. Life Ins. Co. v. Bancorp Servs., L.L.C., 527 F.3d 1330, 1338-39 (Fed. Cir. 2008).

This court already ruled that Cohen may testify at trial with respect to obviousness. Aquatech raises no argument here that draws that ruling into question, or otherwise indicates that Cohen's expert opinion cannot support Veolia's obviousness claim at trial. Drawing all reasonable inferences and resolving all disputed facts in favor of the nonmoving party, Veolia, the court must conclude that a reasonable jury could find that the asserted claims of the '255 Patent are invalid as obvious. For this reason, Aquatech's motion must be denied.

IV. Conclusion

For the reasons set forth above, the only issue on which judgment as a matter of law can be entered is that the Kennecott OPUS system does not infringe any asserted claim of the '255 Patent because it does not reject TOC by at least 95% at the first pass RO system. All other motions for summary judgment are denied. Aquatech's motion to strike is denied.

An appropriate order will be entered contemporaneously with this opinion.

Dated: August 13, 2015

BY THE COURT:

/s/ Joy Flowers Conti

Joy Flowers Conti

Chief United States District Judge